

## Can patients affected by stage II Posterior Tibial Tendon Dysfunction return to sport activities after surgical treatment?

Federico Giuseppe Uselli, MD, Claudia Di Silvestri, MD, Riccardo D'Ambrosi, MD, Camilla Maccario, MD, Eric Tan, MD

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**Introduction/Purpose:** Medial displacement calcaneal osteotomy with flexor digitorum longus transfer is considered the gold standard in treatment of adult flatfoot associated with posterior tibial tendon dysfunction (stage II in Myerson classification). The aim of this study was to estimate if patients underwent medial displacement calcaneal osteotomy with flexor digitorum longus transfer can participate to sport activities.

**Methods:** 48 patients (21 men, 43,75%; 27 women, 56,25%) with a mean age at time of surgery of 42,3 years (range 19-74 years) were evaluated with a medium follow-up of 30 months (range, 27-34 months). All patients were evaluated clinically and by imaging before and after surgery. The clinical evaluation included for each patient the self-filling of Sports Athlete Foot and Ankle Score (SAFAS). and Pre- and postoperative sporting activities were recorded. The imaging evaluation included a pre-operative foot and ankle MRI and weight-bearing radiographs (antero-posterior, lateral and Saltzman 20° views) of the foot and ankle before surgery and at final follow-up. Moreover, each patients' pre- and post-operative sport activities were recorded.

**Results:** Preoperatively, 29 of 48 (60,4%) patients were engaged in athletic activities, participating in an average of 1.4 hours/week (range, 0-6 hours/week); postoperatively, 40/48 (83.3%) participated in sport and recreational activities for an average of 3.5 hours/week (range, 0-15 hours/week). Meary's angle improved significantly from  $11.3 \pm 6.3$  degrees preoperatively to  $7.2 \pm 5.5$  degrees at final-follow-up ( $p < 0.01$ ); calcaneal pitch improved significantly from  $16.1 \pm 4.3$  degrees to  $19.4 \pm 4.8$  degrees ( $p < 0.01$ ). At final follow-up, patients demonstrated good SAFAS scores in symptom tolerance (85.90%), pain tolerance (88.30%), daily living performance (96.2%) and sports performance (86.45%).

**Conclusion:** Most of patients returned or resumed to participate to sport activities after medial displacement calcaneal osteotomy and flexor digitorum longus transfer for the treatment of adult flatfoot associated with posterior tibial tendon dysfunction and the increase of the average number of activities for patient and of the mid time spent was observed.

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